24675

DOE NEWS

State and INEEL scientists focus on understanding results of radionuclide detection

State and federal scientists have detected minute concentrations of plutonium-238 in four samples taken from the Snake River Plain Aquifer at the Idaho National Engineering and Environmental Laboratory. The concentrations of plutonium-238 are in such minute quantities they pose no health risk under Federal standards. The U.S. Department of Energy, State of Idaho and U.S. Geological Survey will take several actions to better understand the source of the contamination, and to protect groundwater at the INEEL.

Officials from DOE, the state and USGS believe there could be several potential causes of the positive detections -- contaminated dust that may have been blown into the sampling wells or taken down by sampling equipment; radionuclides that were released into the aquifer in years past by now-closed injection wells at INEEL facilities; or from waste buried in the past at the Subsurface Disposal Area. The results also will be reviewed to determine the possibility of laboratory or sampling error.

DOE-Idaho shared its sampling results with the State of Idaho and the Region X Office of the Environmental Protection Agency. The state is releasing results of its monitoring today, which also show some positive samples for plutonium-238 at extremely low levels.

Between 1980 and 2001, more than 20 wells in the vicinity of the SDA have been routinely monitored. More than 500 samples from these wells have been analyzed for the presence of plutonium using state-of-the-art methods. The presence of plutonium has been verified through re-analysis in four of these 500-plus samples. These detects were from September/October 2000 sampling results received by DOE.

Plutonium concentrations in the four samples ranged from a high of 0.08 picocuries per liter to a low of 0.02 picocuries per liter with an uncertainty of plus- or minus- 25 percent. The independent laboratory that analyzes samples for the INEEL is required to be able to detect plutonium at levels down to 0.05 picocuries per liter -- 360 times below drinking water standards. The amount of plutonium found in a milliliter of water at the detection limit is equal to the amount present in an average square meter of soil in the United States, which was desposited by world-wide fallout, according to the U.S. Agency for Toxic Substances and Disease Registry (http://www.atsdr.cdc.gov/ToxProfiles/phs9021.html).

The following are steps DOE, the State of Idaho and the USGS are taking to better understand the potential source of contamination, and to protect water quality at the INEEL:

- To get a better understanding of the possibility of sampling error, the INEEL has taken background samples from wells all around the INEEL, and those have been sent to Los Alamos National Laboratory in New Mexico for analysis.

--More--

- If they can get a large enough sampling of plutonium, scientists can use isotopic ratios to determine if it came from the INEEL's buried waste, another source at the site, or from world-wide fallout from atmospheric weapons testing or other sources. Scientists will also look for other chemical constituents that would be present if the plutonium came from the buried waste.

- DOE, the State of Idaho and USGS will conduct their next round of quarterly groundwater monitoring in April. Continued quarterly monitoring will help determine if there are patterns that provide clues as to the source of the contamination, or if these may be false positives or isolated incidents.

- DOE will continue its efforts to improve waste water management practices at the INEEL, which have included reducing or eliminating sources of contamination by closing injection wells. The agency also plans to move percolation ponds that may provide a source for moving contamination in perched water zones below the site.

- DOE is also conducting a remedial investigation/feasibility study to determine what risks are posed by the buried waste at the Subsurface Disposal Area, and what the alternatives may be for removing and/or stabilizing the waste in place. That study will be completed next year, and will provide a basis for DOE and its regulators, with public input, to make a decision on how to remediate the buried waste at INEEL.

The INEEL will advise the Energy Secretary by the end of March on the status of evaluations and monitoring plans.

--DOE-ID--

01-22

Media contact: Brad Bugger, (208) 526-0833